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PAR 212

8 Sept 64

SUBJECT: Color Acquisition System Review Study

## TASK/PROBLEM

1. Investigate color photography as a possible anticipated intelligence medium. Investigation should cover the capability of present and possible future acquisition systems in an attempt to predict future requirements to support exploitation and data reduction of the collected color photographic intelligence material.

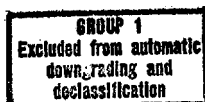
## DISCUSSION

2. Studies of materials for acquisition systems continued at a reduced pace early this quarter. As reported in the previous Quarterly Report dated 5 June 1964, the generation of an actual high altitude original was of paramount importance to these studies.

3. Discussions with customer representatives on 10 June 1964 indicated that current effort be expanded towards system requirements and associated P.I. exploitation equipment and methods. The system requirement effort was initiated with collection of data for an open-end materials-usability chart.

4. As of early August, very few acquisition materials could approximate the system compatibility requirements, and good evaluation was still dependent upon a high altitude original.

5. Another meeting with the customer representative on 18 August 1964 was beneficial only in respect to confirming interest in the materials-usability chart and in the matter of tentative procedures for communicating information to the customer. Currently, we will supply data on available films after initial testing and depend upon customer guidance to make selection for further study. While this arrangement is not the most efficient in avoiding delays on the project, it will insure compliance with security regulations.

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6. Table I, "Usability Data for Acquisition Materials" is shown on the following pages as requested. Certain parts of the data will be noted as missing or subject to further testing. It was anticipated earlier, during the 18 August discussions, that this chart would be kept up-to-date as more refined tests and measures were made. Also, materials would be removed from or added to the chart whenever this was both possible and desirable..

7. Evaluation is now underway on a high altitude acquisition. Extensive testing of the material used, Kodak High Definition Aerial Film (Type SO-121), is expected to yield information of considerable interest to the customer. Results will be reported as soon as a relatively complete evaluation can be made. This is estimated to be about three weeks hence and is thus possible for inclusion in the next monthly report.

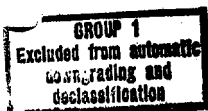
#### PLANNED ACTIVITIES

8. Complete the evaluation of Kodak High Definition Aerial Film (Type SO-121) for the purpose of revising and/or increasing the data reported in Table I.

9. Investigate current and possible future acquisition system capabilities as specified in the TASK/PROBLEM only at the direction of the customer. In the discussions of 18 August 1964, the customer representative indicated that PLANNED ACTIVITY related to this type of effort could include predictions of material characteristics that aid in equipment design.

10. No further planning will be initiated in the lower altitude (below 50,000 feet) materials until advised of a renewed interest. Type SO-282 (for low altitude) has been included in Table I as a matter of interest because the data were readily available.

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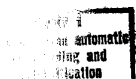
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TABLE I

USABILITY DATA FOR ACQUISITION MATERIALS

Product Name	Kodak High Definition Aerial Film, Type SO-121	Ektachrome Aero Film, Type 8442	Special Ektachrome Aero Film Type SO-282 (MS)	Kodachrome II for Daylight
Acquisition Application	For medium to high altitude	For medium to high altitude	For low altitude	Usable for high altitude
Aerial Exposure Index	13 (estimated)	25	6	2.5 to 3.0
Resolution (lines/mm)				
a. Target Contrast >10:1	151	100	80	119
b. Target Contrast 1.6:1	76	32	35	63
RMS Granularity	0.0198	0.0820	0.0120	0.0100
Special Lens Requirements	Full color correction	Full color correction	Full color correction	Full color correction
Filter Requirements	2E	2B	Probably 2B (Needs testing)	Probably 2B (Needs testing)
Overall Thickness	3.5 mils	6.1 mils	6.0 mils	5.8 mils
Anti-halation Backing	Dyed Pelloid	Undercoat	Undercoat	Rem-jet

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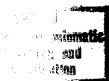
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Product Name	Kodak High Definition Aerial Film, Type SO-121	Ektachrome Aero Film, Type 8442	Special Ektachrome Aero Film Type SO-282 (MS)	Kodachrome II for Daylight
Overall Splice Thickness	8.5 mils	11.1 mils	11.0 mils	10.8 mils
Splice	4.5 mils	Does not apply	Does not apply	Does not apply
Header (Incorporated)	Customer Specification	Customer Specification	Customer Specification	Customer Specification
Trailer (Incorporated)	Customer Specification	Customer Specification	Customer Specification	Customer Specification
Size (Width and Length)	Customer Specification	Customer Specification	Customer Specification	Customer Specification
Edge Printing	Customer Specification	Customer Specification	Customer Specification	Customer Specification
Max. Film Transport Speed at RH (Corona discharge)	Info unavailable	Info unavailable	Info unavailable	Info unavailable
Processing	Mfg. Recommendation	Mfg. Recommendation	Mfg. Recommendation	Mfg. Recommendation
Acquisition System Adaptability	Info not available to	Info not available to	Info not available to	Info not available to

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